

Utah's Winter-Time Air Pollution

- Working To Clean Utah's Winter Air

What is Utah's Winter-Time Pollution?

- Utah's smog is primarily composed of fine particles ($PM_{2.5}$).

Where Does the Pollution Come From?

- Our $PM_{2.5}$ particle pollution starts as gas emissions from cars and trucks, large industry, commercial activity, and households.

How is Our Pollution Created?

- Gas emissions are converted to different types of $PM_{2.5}$ particles through complex chemical reactions.



Pollution Sources – Gases



Cars & Trucks



Large Industry



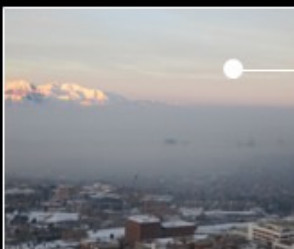
Commercial



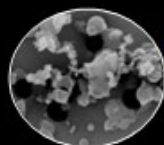
Household



Particle Creation – Air Chemistry



The Air We Breathe – $PM_{2.5}$ Particulates



75%

Converted $PM_{2.5}$



25%

Soot & Dust



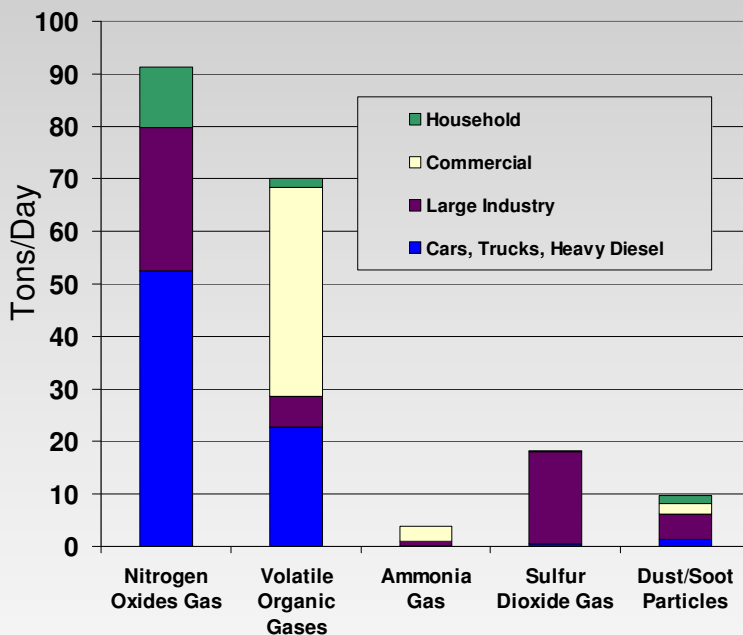
Detailed View of the Emissions that Enter the Air

What is the link between emissions from daily activity and the air pollution that accumulates during a winter inversion?

- Nitrogen Oxides, Volatile Organic Compounds, Ammonia, and Sulfur Dioxide gas emissions react in the air to form about 75% of the PM_{2.5} during an inversion.
- Dust and soot particles go directly into the air and do not transform in the atmosphere. These constitute the other 25% of the PM_{2.5} particles in the air.

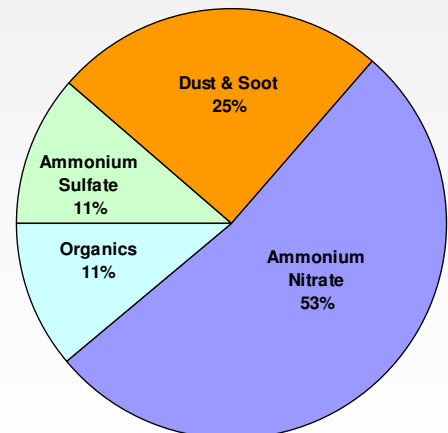
Winter-Time Emissions

Our best estimate of the local sources that add to the pollution load on a daily basis



Measured Air Pollution

When air in the valley is at its worst, chemical reactions create the majority of particles in the air



Utah Department of
Environmental Quality

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